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Policy design dynamics: fitting goals and instruments in transport infrastructure planning in the Netherlands

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ABSTRACT

A policy design is a dynamic mix of goals and instruments that develop over time through processes of layering, drift, conversion, replacement and exhaustion. In the face of these dynamics, it is a key concern for policy designers to maintain fit between policy design elements by sustaining goal coherence, instrument consistency and the congruence of goals and instruments. Even though the temporal aspect is fundamental to new policy design thinking, few studies have dealt with the interrelation between policy dynamics and fit. With a longitudinal case study of Dutch transport planning, this research aims to provide insight into this interrelation and to highlight practical implications. This study reveals an intricate and ongoing fitting process between goals and instruments, in which any moment of coherence, consistency and congruence is temporary. During this fitting process, goals and instruments developed in different and largely separate trajectories. In this case, layering successfully improved congruence, but at the same time created inconsistencies between old and new instruments. To resolve some of these inconsistencies, conversion was used. These findings show that policy design is an ongoing process. The main practical implications of this study are that integrating the design of goals and instruments is an essential first practical step, that the ongoing monitoring and evaluation of policy design performance should be a central component in the ongoing process of policy design, and that a combination of layering and conversion can be a successful design approach to adjust instrument mixes to changing goals.

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Policy design; policy mix; coherence; consistency; congruence; transport infrastructure planning; policy design fitting

1. Introduction

Policy design has always revolved around effectively realizing policy objectives through the calibration of policy goals and policy instruments. A new wave of design research engages in finding the right mix of the instruments to be used throughout the policy

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process to achieve multiple goals (Howlett et al. 2015; Rogge and Reichardt 2016). A policy design should then be thought of as a multi-goal and multi-instrument configuration or mix (Howlett 2014a, 2014b). Its effectiveness is largely defined by the supportive relationship – the fit – between the total mix of goals and instruments that forms the design (Rayner et al. 2017; Peters et al. 2018). Fit may be understood as the sum of goal coherence, instrumental consistency, and congruence between goals and means (e.g. Howlett 2009; Kern and Howlett 2009; Howlett and Rayner 2013).

Theoretically, it is preferable to develop policy designs from scratch; however, this hardly ever happens in practice (Rayner and Howlett 2009). Instead, policy designs tend to evolve over time by building on the legacies of earlier design choices. Multiple studies have shown that it is challenging to sustain fit between goals and instruments in the face of these developments (Del Río et al. 2011; Howlett and del Río 2015; Rogge and Reichardt 2016; Kern et al. 2017). Policy designs often unintentionally develop into sub-optimal mixes, thus compromising their effectiveness (Howlett 2009; Kern and Howlett 2009; Howlett and Rayner 2013, 2018; Rayner et al. 2017). Therefore, equipping policy designers with strategies to maintain design fit in the face of these dynamics is a critical step forward in the field of policy design.

Despite a growing number of empirical studies on the incremental development of policy designs (e.g. Del Río et al. 2011; Rogge and Reichardt 2016; Schmidt and Sewerin 2018), there have been surprisingly few studies on the interplay between the dynamics and policy design fit (Rayner et al. 2017). The existing literature on this topic is predominantly conceptual in nature (e.g. Rayner and Howlett 2009; Howlett and Rayner 2013; Howlett 2018), and only a small number of empirical studies have been carried out. These case studies, which predominately focused on the energy sector, provided initial evidence that the temporal dynamics of policy design influences the goal coherence, instrumental consistence and congruence between goals and instruments (Kern and Howlett 2009; Rogge and Reichardt 2016; Kern et al. 2017; Rogge and Schleich 2018; Trencher and Van der Heijden 2019). However, these case studies did not include a detailed examination of the interplay between policy design dynamics and fit. Moreover, they paid only limited attention to practical implications.

This study aims to provide greater insight into the interplay between policy design dynamics and policy design fit as well as to deduce in retrospect what the implications are for policy design practice. To this end, we performed a historical analysis of the evolution of Dutch national transport planning policy goals and policy instruments between 1997 and 2018. We chose this case study because the national transport policy design underwent considerable changes in this period: policy goals changed as the planning approach shifted from a sectoral transport orientation to an integrated land use-transport planning orientation, and policy instruments were thoroughly revised (Van Geet et al. 2019).

2. Literature review

Goals and instruments are the two core elements of any policy design (Howlett 2009). Policy goals are statements of government objectives and ambitions in a specific policy area, and instruments are considered the arrangement of the means used throughout

the policy process to attain these objectives and ambitions (Howlett and Rayner 2007; Howlett 2014b).

Policy design study emerged and developed from the policy sciences in the 1980s and early 1990s. After a dip in popularity, it is currently receiving renewed interest (Howlett and Lejano 2013; Howlett 2014a; Howlett and Mukherjee 2018). Broadly speaking, policy design revolves around “the deliberate and conscious attempt to define policy goals and to connect them to instruments or tools expected to realize those objectives” (Howlett et al. 2015, 292). This generic definition reflects the goal-driven and pragmatic instrumental focus that underlies policy design. According to Howlett (2014a), a distinction can be made between old and new design approaches. Whereas the former can be characterized by a single instrument design rationale following a straightforward means-to-end understanding (e.g. Hood 1983; Linder and Peters 1984; Salamon 1989; May 1991), the latter has a more comprehensive perspective on policy design. It views policy designs not as given sets, but rather as an interactive mix of goals and instruments (Howlett and Lejano 2013). Furthermore, it acknowledges the dynamic character of these mixes as a result of temporal and contextual influences.

Essentially, new design thinking aims at creating policy mixes with coherent goals, consistent instruments, and congruent goals and instruments (Howlett and Rayner 2013). Meeting these design criteria is widely considered a key requirement for policy designs to effectively produce optimal outcomes (Howlett 2009; Kern and Howlett 2009; Howlett and Rayner 2013, 2018; Rayner et al. 2017; Peters et al. 2018). In line with Kern and Howlett (2009), policy goals are considered *coherent* if they relate to the same overall policy objectives and can be pursued at the same time without tradeoffs; instruments are considered *consistent* if they are mutually supportive and work together to achieve the same goal by creating related incentives and disincentives; and goals and means are considered *congruent* if they serve corresponding purposes. As shown in Figure 1, this study proposes the term “policy design fit” to express the extent to which these design criteria are met.

Policy design fit

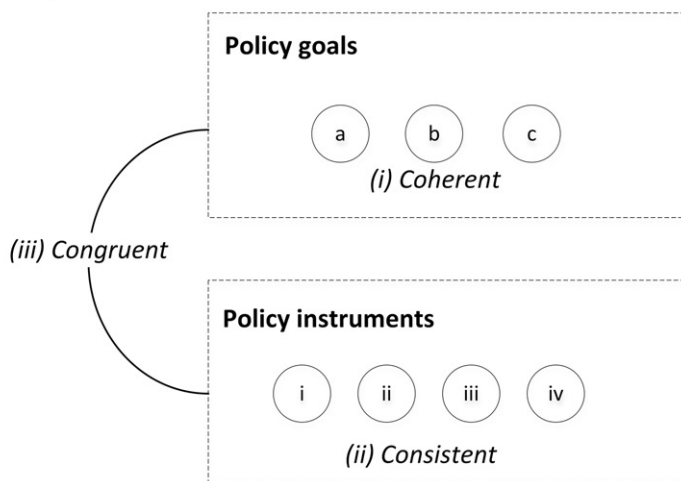


Figure 1. Elements defining policy design fit.

A number of studies discuss how policy mixes, like institutions, evolve over time through five modes of change: layering, drift, conversion, replacement and exhaustion (Streeck and Thelen 2005; Kern and Howlett 2009; Rayner and Howlett 2009; Howlett and Rayner 2013; Howlett et al. 2015; Kern et al. 2017; Rayner et al. 2017; Peters 2018). Multiple empirical studies show that policy designs generally evolve through a combination of these modes (e.g. Van der Heijden 2016; Kern et al. 2017; Rayner et al. 2017). *Layering* entails the process of adding goals and/or instruments without replacing or adjusting existing design elements. Consequently, policy mixes typically develop into increasingly complex configurations of elements that are based on various conceptual understandings (Peters 2005). *Drift* describes a situation in which goals of policy change, without changing the instruments to implement them (Howlett et al. 2018). *Conversion* refers to a situation where an existing instrument is used differently in response to changed goals (Mahoney and Thelen 2010). *Replacement* occurs when new design elements are deliberately put in the place of old ones, which may happen abruptly or gradually, depending on the rigidity of existing elements (Streeck and Thelen 2005). Replacement initiatives are often impeded by design elements that are already in place and that have created path-dependency (Peters 2018). Finally, *exhaustion* refers to a process of breakdown or fading away rather than actual change (Streeck and Thelen 2005). Howlett and Rayner (2013) argue that the latter concept, exhaustion, may be used to describe situations in which older design elements are undermined because they do not function satisfactorily in the light of newer policy elements.

Generally, scholars see replacement as the preferred mode of policy design development because internally supportive combinations of goals and instruments can be designed as an integrated whole without the externalities of preexisting elements (Rayner and Howlett 2009). Thereby, it “simply imposes the smallest number of constraints on successful design” (Howlett and Rayner 2013, 177). However, this form of wholesale replacement of a policy design, referred to as *policy packaging*, is rare in practice. Usually, policy designs develop incrementally through layering, drift and conversion, building on what has been established in the past (Howlett et al. 2018). Legacies from past decision-making are often persistent and hard to change. They create path-dependencies, limiting the freedom of policy makers in policy design. In such situations, policy design takes the shape of reform, in which designers use forms of layering, drift and conversion as “patches” to restructure existing policy elements (Howlett and Rayner 2013). However, policy patching has two sides. If it is done well, patching can positively influence the fit of a policy design – this is called “smart patching” (Howlett and Mukherjee 2014). For example, layering instruments to form complementary mixes can produce an enhanced effect (Gunningham et al. 1998; Gunningham and Sinclair 1999). Furthermore, smart patching can help adapt mixes to changing circumstances (Howlett and Rayner 2013) and “ameliorate or reduce tensions” between policy elements (Rayner et al. 2017, 481). In contrast, if patching is done poorly, conflicts may arise between old and new policy elements, unintentionally causing policy mixes to evolve into suboptimal configurations (Kern and Howlett 2009; Howlett and Rayner 2013; Howlett et al. 2015; Kern et al. 2017). An example is the

phenomenon of stretching, in which policy mixes are extended to cover areas that were not intended in the outset (Feindt and Flynn 2009; Rayner et al. 2017), creating contradictory goals and instruments (Howlett et al. 2018).

3. Research design

A single case study approach was adopted to obtain greater insight into policy design dynamics and their influence on policy design fit. This theory-based research approach allows for an in-depth investigation of phenomena (Dyer and Wilkins 1991; Yin 2003; Siggelkow 2007). We chose a single case over a multiple case study, because the required division of resources between cases would compromise the depth of the analysis (Yin 2013).

The case study design was created following Yin (2003). The unit of analysis is the Dutch national government's infrastructure planning policy design between 1997 and 2018. For a more detailed level of inquiry, the case study focuses on two embedded units of analysis: policy goals and policy instruments. Policy goals pertain to all national transport planning policy strategies implemented between 1997 and 2018. Policy instruments concern all instruments of the Dutch national transport planning, programming and budgeting (PPB) system. This PPB system is called the Long-range Program on Infrastructure, Space and Transport (*Meerjarenprogramma Infrastructuur, Ruimte en Transport* in Dutch, abbreviated as MIRT). The MIRT system comprises a wide variety of policy instruments that shape the process of transport infrastructure planning, investment and development (see Lenferink et al. 2014; Arts et al. 2016; Heeres 2017; Van Geet et al. 2019). To delimit the focus of this study and allow for a more in-depth analysis, emphasis was put on the development of the policy instruments used in the formation and adoption stages of the MIRT process.

Data were gathered by using a mixed-method approach that combined longitudinal document analysis, in-depth interviews, focus group discussions and workshops. Document analysis laid the foundation of this research as a source of historical data, allowing us to track the development of the Dutch infrastructure policy design over time (Bowen 2009). We analyzed the development of policy goals by referring to V&W (1988), V&W and VROM (2004) and I&M (2012), and we studied the evolution of policy instruments as documented in V&W (1997, 2004), V&W and VROM (2009), and I&M (2011, 2016). The outcomes of this analysis served as input for 21 semi-structured interviews with experts working for the Ministry of Infrastructure and Water Management in the Netherlands (*Ministerie IenW* in Dutch) as well as the Directorate-General for Public Works and Water Management (*Rijkswaterstaat* in Dutch). All interviewees were involved in the formation or implementation of the Dutch national transport policy or the design or operation of the PPB system MIRT. The interviews were complemented with two focus group discussions based on statements derived from the document analysis and interviews. All interviews and focus groups were transcribed. Finally, all textual data were systematically analyzed according to a deductive coding scheme following the theoretical framework. A respondent list can be found in Appendix A.

4. Results

In order to gain a more in-depth understanding of the interplay between policy design dynamics and fit, we performed a longitudinal study of the Dutch national infrastructure policy design. Figure 2 presents an overview of the observed dynamics of goals and instruments, as derived from the longitudinal document analysis. In line with the example presented in Table 1, a detailed description of how each policy element developed is provided in Appendix B. The results of the document study were triangulated with empirical data from interviews and focus groups to obtain a better understanding of how these dynamics influence policy design fit. The results are presented below from the following three perspectives: (i) the evolution of policy goals and how they affect *goal coherence*, (ii) instrumental development and how it influences *instrumental consistency*, and (iii) the development of policy goals in relation to policy instruments and how this influences *congruence between goals and instruments*.

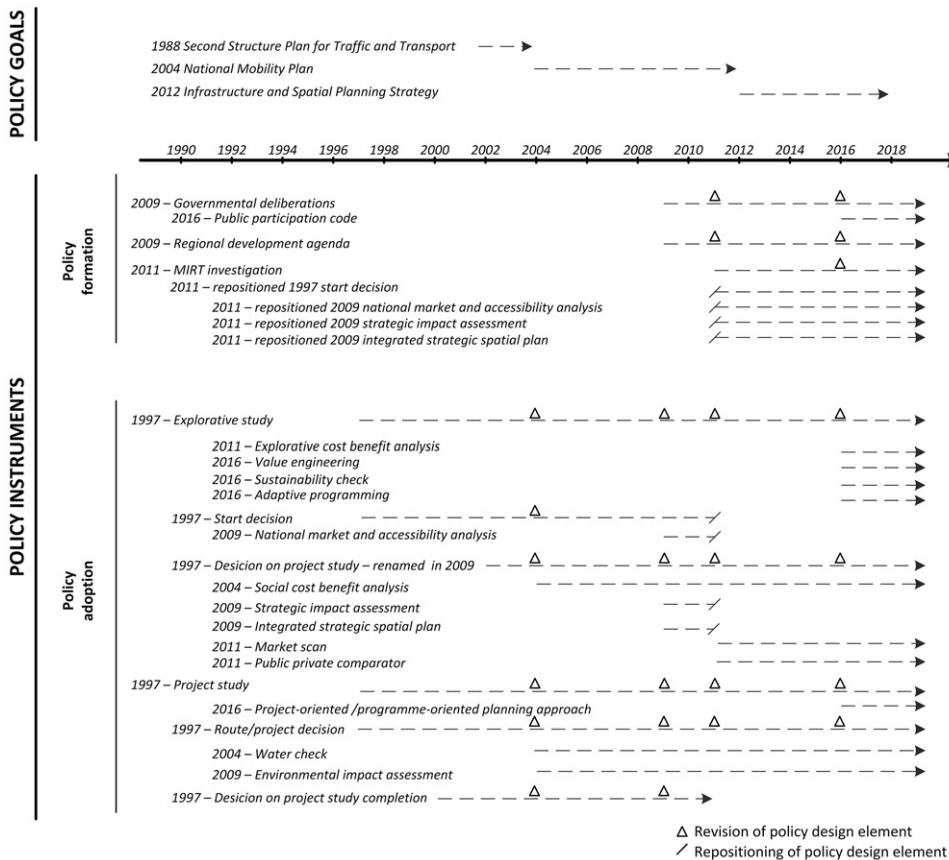


Figure 2. The development of Dutch national transport policy design during the stages of policy formation and adoption. A detailed description of the changes is provided in Appendix B.

Table 1. Development of the Regional Development Agenda as a policy instrument in time.

Dutch national infrastructure planning, programing and budgeting system					
Policy stage	1997 MIT Rules	2004 MIT Rules	2009 MIRT Rules	2011 MIRT Rules	2016 MIRT Rules
Formation stage			(+) Regional Development Agenda (in Dutch: <i>Gebiedsagenda</i>) The Regional Development Agenda is an integrated policy agenda between national and regional governments on land use, mobility, water and climate, housing, business agriculture, nature and landscape policy. There are 4 different regional development agendas. These agendas are discussed and updated every 6 months during the governmental deliberations. They provide themes for explorative studies	(Δ) Regional Development Agenda (+) Regional development agendas should be continually updated and used throughout the whole policy process.	(Δ) Regional Development Agenda (+) Regional development agendas are made in collaboration with all relevant public and private stakeholders. (+) They have an integrated character and include all spatial issues that require collaboration between national and regional government, such as accessibility, water safety, water quality, climate adaptation, nature, sustainability, cultural heritage, transboundary issues, spatial-economic policy and energy policy. (Δ) There are 7 different Regional Development Agendas. (+) Implementation and monitoring should be included in the process of agenda setting

(+) Added policy design element, (Δ) revised policy design element.

4.1. Policy goals and coherence

4.1.1. The goals of Dutch national infrastructure policy over time

Between 1988 and 2004, the Dutch transport policy was predominantly geared towards decreasing car dependence and improving public transport. To achieve this, the 1988 Second Structural Plan for Traffic and Transport (abbreviated as SVV-II) emphasized the need to overcome fragmented planning of rail, road and water infrastructure. SVV-II stressed the need for collaboration between national transport departments and between national and regional governments (V&W 1988). The policy goals of SVV-II covered 4 policy themes divided into 23 tracks, which were further subdivided into 136 projects covering various modes of transport. Each of these projects was detailed in terms of goals, planning, costs and responsible government(s). In addition to this focus on multi-level and cross-sector integration, in SVV-II initial steps were taken towards the coordination of transport and land use planning. It was stated: “As yet, transport has had a limited influence on land use policy. This must change. [Subsequently], coordination will take place between the national strategy on transport planning and the national strategy on land use planning” (V&W 1988, 6, 13). This ambition was

translated into goals to concentrate the development of workplaces, housing and recreation facilities around public transport nodes. In addition, SVV-II was aimed at integrating new infrastructure developments into their surroundings.

In 2004, the National Mobility Plan (NoMo) replaced SVV-II. NoMo was developed in close adherence to the goals of the National Spatial Plan. Its central ambition was to strengthen the “interrelationship between land use, transport and economy at every level of government to sustain the competitiveness of the Dutch economy” (V&W and VROM 2004, 10). NoMo covered 6 themes, each of which carried a variety of generic policy aims; for example, it stated that “to achieve economic growth and a strong international competitive position, the Netherlands must take a more integrated approach on economic, land use and infrastructure development” (V&W and VROM 2004, 18). To facilitate reaching these goals, the roles and responsibilities of national, regional and local governments were described. In line with the NoMo’s maxim “decentralize if possible, centralize if necessary,” responsibilities on transport and land use planning were disaggregated and partly decentralized, and regional governments and private actors were given a greater role in the decision-making and implementation of transport policy. Furthermore, public–public partnerships were formed for the delivery of infrastructure projects.

In 2012, NoMo was replaced by the Infrastructure and Spatial Planning Strategy (abbreviated as SVIR). This integrated land use and transport strategy has three main objectives: increasing economic competitiveness, improving accessibility, and adopting an integrated regional approach to land use and transport planning (I&M 2012). These goals were further substantiated into thirteen general policy objectives, for which the Dutch national government took formal responsibility. In conformity with the strategy’s two maxims “decentralize, unless ...” and “either it is your responsibility or it is not your responsibility,” the division of responsibilities between levels of government continued. The national government primarily focused on its own responsibilities, and regional governments received more autonomy in land use and transport planning. To stimulate regional policy integration, the SVIR called for the further operationalization of the SVIR’s national policy goals in collaboration with regional governments in shared regional policy agendas (I&M 2012).

4.1.2. Periodical replacement of policy goals

The results of the document analysis indicate that the coherence of Dutch national transport planning goals was maintained successfully through replacement. New policy strategies were formulated as a comprehensive and coherent package of mutually supportive goals that worked together toward an overarching policy aim. As a new strategy was adopted, its predecessor automatically expired; this allowed goals to develop relatively flexibly without much influence of past design choices. In between these moments of replacement, the policy strategies did not undergo any formal revisions. Hence, the document analysis did not reveal any processes of layering, conversion or exhaustion. Despite this process of wholesale replacement of policy goals, the data indicates that strategies cannot be seen as being entirely separate from each other. The trend toward regionalization and policy integration indicates that strategies build on each other. Policy goals have been defined at an increasing level of abstraction,

deliberately leaving more room for further operationalization of these goals in collaboration with regional and local land use and transport policy.

Both the document analysis and the interview data provided insight into the drivers behind this development process of policy goals. The document analysis revealed that the 1988 Second Structural Plan for Traffic and Transport was adopted because the existing policy strategy was outdated, as “much has happened in the domain of transport planning. The role of cars, public transport and freight is under discussion. The political and economic conditions have changed and the technological development is progressing” (V&W 1988, 6). Subsequently, the National Mobility Plan was developed “as a result of the 1998 Traffic and Transport Planning Act” (*Planwet Verkeer en Vervoer* in Dutch) (V&W and VROM 2004, 6). Lastly, the Infrastructure and Spatial Planning Strategy was formulated in accordance with the 2008 Spatial Planning Act (*Wet Ruimtelijke Ordening* in Dutch) because “existing policy notes are outdated due to new political values and changing societal circumstances such as the economic crisis, climate change and increasing regional differences” (I&M 2012, 9). Respondents have confirmed these contextual and legislative influences on the development trajectory of policy goals. Interviewee 13 stated that in formulating policy goals, “we are figuring out what politics and society want. And this changes constantly.” Furthermore, Interviewee 40 commented that “in the end we have to comply with legislation so that is our starting point.”

4.2. Policy instruments and consistency

4.2.1. The instrument mix of Dutch national infrastructure policy over time

The document analysis reveals how the planning stage of the Dutch national infrastructure PPB system has become increasingly more comprehensive and complex (Appendix B). In 1997, the PPB system comprised of two main instruments, namely the explorative study and the project study. In multiple rounds of revisions, the PPB system was transformed considerably as new policy instruments were added and existing instruments were revised.

In 2004, the first round of revisions was completed. New rules obliged a social cost-benefit analysis of proposed infrastructure developments and posed additional requirements for conducting an explorative study. As a result, decision-makers now needed to explore the benefits of public–public and public–private collaboration and to assess the impact and cost-effectiveness of proposed infrastructure development plans. Furthermore, regional governments were formally given autonomy on decision-making if the costs remained within a certain financial limit. Finally, shared decision-making across ministries was encouraged.

The next revision followed in 2009. Changes were targeted at coordinating investments in infrastructure, housing, business development, accessibility, water management and nature by involving regional governments and other stakeholders (V&W and VROM 2009). In line with this objective, the PPB system underwent considerable changes. The most significant change was the introduction of periodic governmental deliberations and four regional agendas as new instruments to encourage a better integration of transport and land use policy on the regional scale prior to the start of an

explorative study. Furthermore, existing instruments were revised to include an area-oriented approach that focused on integrating land use and transport planning and development. Finally, the information requirements were expanded and standardized for all types of infrastructure development.

In 2011, the PPB system was revised for the third time, with modifications aiming primarily at achieving process time reduction (I&M 2011). One way in which this was realized was by reducing the number of decision-making moments from five to four. In addition, emphasis was put on improving the quality of early-stage collaboration and decision-making, as this would save time during the later stages of project study – limited to 2 years – and project execution. Subsequently, a MIRT investigation was introduced as a new instrument during the formation stage.

The most recent review was completed in 2016. Changes were made to stretch the scope of MIRT further by including more public and private stakeholders in the decision-making. More specifically, these changes aimed to encourage collaboration between national and regional governmental organizations – including provinces, municipalities, transport regions, and water boards – and between governmental organizations, civil society and market actors, to increase the competitiveness, accessibility and livability of the Netherlands in a sustainable way (I&M 2016). To achieve these aims, the number of regional policy agendas was increased from four to seven, the scope of information criteria was broadened, and a program-oriented planning approach was introduced as a new policy instrument.

4.2.2. Instrumental layering and conversion leading to congruence and inconsistencies

Overall, the PPB system evolved during an intricate process of layering and conversion. The layering of instruments was the dominant mode of change, for example the introduction of governmental deliberations, regional development agendas and the MIRT investigation as policy instruments prior to the start of the explorative study. Furthermore, the social cost–benefit analysis, the national mobility and accessibility analysis, the integrated strategic plan, the strategic impact assessment, the implementation strategy, and the sustainability check were introduced in the explorative study. Similarly, the market scan, water management check, delivery test and the program-oriented planning approach were added to the project study. Besides layering, there were numerous examples of instrumental conversion: the purpose and scope of existing instruments were redefined, formal decision-making moments were renamed and repositioned in the decision-making process, and information requirements for making these decisions were revised. Contrary to the numerous instances of layering and conversion, our document analysis did not show any examples of replacement and exhaustion.

Our data provided concrete evidence of the influence of instrumental dynamics on instrumental consistency. In this article, consistency is defined as the extent to which incentives and disincentives created by the different instruments are aligned and mutually supportive. Within the period under study, numerous instruments introduced to the PPB system served a variety of purposes. In turn, these instruments introduced a wider variety of incentives, which sometimes counteracted one another. In the 1990s, the PPB system was introduced as a mix of instruments for transport infrastructure investments

to stimulate transparent and informed decision-making in infrastructure developments in line with the national transport policy (V&W 1988). Gradually, there was an increasing focus on efficient project delivery, which was reflected in the preference for public-private partnerships from 2004 onwards as well as in process optimizations adopted in 2011. Subsequently, from 2009 onwards, the PPB system became increasingly concerned with regional policy formulation and integration. The conversion of existing instruments helped to maintain consistency with newly developed instruments.

Multiple respondents have reflected on how instrumental layering affected the instrument mix. Respondents 41 & 44 observed that the instrument mix has become “top-heavy” and has deviated from its original function, namely infrastructure programming and budgeting. Furthermore, it was noted that the layering of instruments created inconsistencies that affected instrumental success. For example, Respondent 35 stated that in the way the instrument mix works “it is all about infrastructure investments. As a result, the infrastructure component remains very dominant and governmental deliberations are primarily concerned with acquiring funding for infrastructure development projects.” Respondent 7 gave another example, by stating that “the explorative study ends with a route decision. A route decision can only be taken for the development of infrastructure [...] so in fact you need a mobility problem that can be solved through infrastructure. Otherwise you cannot use the MIRT procedure.” Respondent 17 explained that these inconsistencies cause “the Regional Development Agendas not to function as they should.” Respondent 20 highlighted another inconsistency between an old and a new instrument: the national mobility and accessibility analysis that predicts future bottle-necks on national transport networks and provides possible infrastructure solutions counteracts the Regional Development Agenda, which is directed at finding integrated land use and transport solutions at the regional level. Additionally, it is interesting to note that it was frequently suggested that institutional influences such as organizational fragmentation and administrative and political culture prevented the instrument mix from functioning optimally. Respondent 45 stated that “it is due to the institutional setting in which the MIRT is embedded” that some policy instruments are not yet functioning as they are intended.

4.3. Congruence between goals and instruments

Figure 2 summarizes the results of the longitudinal analysis of the Dutch national transport planning policy design, showing how policy goals and instruments have developed over time. What stands out from the figure is that both policy elements are characterized by distinct development trajectories. Whereas goals have evolved relatively flexibly by means of periodic replacement, the instruments have developed more incrementally by means of layering and conversion. Furthermore, it becomes clear from the figure that the elements developed in consecutive order. Interviews provided more in-depth insight into this process of policy design development. Respondents 1, 13, and 20 all stated that policy goals are defined first and that subsequently the instrument mix is adapted accordingly. Furthermore, Respondents 3 and 13 stated that although both processes are coordinated by the same ministerial organization, goals, and instruments are largely developed in separated trajectories by different teams.

Interestingly, respondents highlighted that policy outcomes do not play a leading role in this design process as “feedback from monitoring and evaluation is not established” (Respondent 13), even though, as Respondent 51 put it, “it is essential in dynamic processes of policy making and implementation.”

As a result of the ongoing development of the Dutch national transport policy design, the congruence between goals and instruments was constantly changing. When the Dutch PPB system was introduced as an integrated national transport budgeting instrument, it had a clear focus on delivering transport infrastructure. Initially, drift occurred as NoMO was adopted in 2004, progressively emphasizing regional policy integration, and the incongruence between policy goals and instruments grew. Through instrumental layering and instrumental conversion, these processes of drift were counteracted, and congruence between the two elements of policy design incrementally improved when the PPB system was revised in 2009 and 2011. This process was repeated when the incongruences that arose during the adoption of the SVIR in 2012 were partly restored during the revision of the PPB system in 2016. However, despite these improvements, Respondent 20 commented that several old instruments hinder the realization of current policy goals.

5. Discussion

This study sheds more light on how policy dynamics have influenced policy design fit in the field of transport infrastructure planning. Overall, the results reveal an ongoing interplay between policy design dynamics and policy design fit; processes of layering, drift, conversion and replacement constantly influence goal coherence, instrumental consistency, and congruence between goals and instruments.

5.1. Policy design dynamics: the development of goals and instruments over time

In Dutch national infrastructure planning, policy goals and instruments have evolved in distinct ways. Policy goals have developed through the wholesale replacement of coherent strategies, with only minimal influence of preexisting design elements; in contrast, policy instruments have developed showing strong path-dependency as a result of the persistency of existing instruments. Due to the rigidity of these established instruments, the instrument mix has evolved incrementally by means of layering and conversion, causing it to expand considerably over time. This study has also revealed that goals and instruments generally develop separately. Even though the PPB system was formally introduced to realize national policy goals on infrastructure development, after being adopted it developed more or less autonomously from national policy goals and was aimed more at regional policy integration and effective project delivery.

Comparing these policy dynamics with other case studies (e.g. Howlett and Rayner 2004; Reichardt and Rogge 2016; Kern et al. 2017; Rayner et al. 2017), we see interesting differences and similarities in how policy designs evolve in different sectors and different countries. This reflects the highly context-specific nature of policy design dynamics. Different studies highlight different dynamics of and interplay between goals

and instruments. Interestingly, our observation that goals and instruments develop in distinct ways was not reported in other studies. Kern and Howlett (2009), Kern et al. (2017), and Rayner et al. (2017) identified layering as the dominant mode of change for both policy goals and policy instruments, while others uncovered the guiding influence of preexisting elements on the evolution of a policy design (e.g. Kern and Howlett 2009; Howlett et al. 2015; Rayner et al. 2017). In line with Howlett et al. (2018), we found that the existing landscape of policy elements reduces the flexibility necessary for innovation and adaptation of policy designs. In our study, however, this guiding influence was only found in the trajectory of instrumental development.

5.2. Ongoing fitting process of policy design elements

The study supports the idea that over time, processes of policy design development affect policy design coherence, consistency and congruence (e.g. Howlett and Rayner 2013; Kern et al. 2017; Rayner et al. 2017; Howlett et al. 2018). One objective of this research was to provide more insight into this relatively unexplored interplay between policy design dynamics and policy design fit. Our longitudinal analysis reveals an ongoing fitting process in which the continuous and intricate evolution of policy goals and instruments is constantly redefining the coherence, consistency, and congruence of a policy design. These outcomes help us to understand that any moment of fit is temporary, and that maintaining or improving fit requires ongoing attention as goals and instruments are continuously developing over time.

In the case of Dutch national infrastructure planning, the observed process of fitting is characterized by flexible evolution of policy goals, followed by the incremental adaptation of the underlying instrumental mix. Our results show that, policy goals were characterized by an increased focus on land use transport policy integration, and they were being formulated with a growing level of abstraction. Goals were increasingly left open for further operationalization at the regional level in coordination with regional and local land use and transport policy goals. Following this trend, the instrument mix underwent considerable changes. By means of layering, new policy instruments were added to the mix, thus, complementing its initially sole focus on programing and delivery of national transport infrastructure with regional policy formulation and integration. Even though this form of policy stretching managed to successfully improve the congruence of the policy design, it also gave rise to inconsistencies between old and new instruments, for example the inconsistency between the transport-oriented appraisal instruments and regional development agendas that were directed at policy integration (Van Geet et al. 2019). Conversion helped reduce some of these inconsistencies, for example the explorative study that was revised in 2009 to allow for a combination of land use and transport projects to be included.

5.3. External influences on policy design dynamics

Recent studies have described how the embeddedness of policy designs causes their development to be susceptible to the influences of the political, administrative and legal institutional context (e.g. Howlett and Rayner 2004; Howlett 2014a; Rogge and

Reichardt 2016; Bahn-Walkowiak and Wilts 2017; Falcone et al. 2017; Rayner et al. 2017; Lieu et al. 2018). The institutional context influences the formulation process of design elements and their alignment (Flanagan et al. 2011; Howlett et al. 2015; Chindarkar et al. 2017). Although contextual influence on policy design dynamics was not specifically part of this research design, evidence was found that indicates that this influence may partly explain the policy design *fitting* process that was observed.

The growing abstraction of policy goals, for example, can be seen as a consequence of the decentralization of roles and responsibilities in spatial planning. These formal institutional changes have considerably reduced the role of the national government and stimulated the need for collaboration between national and regional governments. Moreover, the separated development of policy goals and instruments may be institutional by nature. Formulating a new policy strategy and revising the PPB system are institutionally different trajectories which involve different actors and follow different administrative and legal processes. Furthermore, the outcomes of Van Geet et al.'s (2019) institutional analysis on the Dutch national transport planning helps us understand the incremental instrumental development process observed in this study. The rigidity of formal budgeting and participation jurisdiction, together with informal political rules, generate powerful incentives to maintain traditional sectoral instruments that do not support contemporary policy goals on regional land use transport integration (Van Geet et al. 2019). This corresponds with Rayner et al.'s (2017) finding that a design element remains inherently embedded in the political and institutional history of the jurisdiction that created it. The contextual influence on the evolution of a policy design is, therefore, an important issue for future research.

5.4. Implications of our findings for policy design

Policy designs are deliberately devised mixes of goals and instruments that strive to attain predetermined outcomes. In line with previous research, this study illustrates how such policy designs can evolve into sub-optimal configurations due to temporal processes (see Howlett and Rayner 2013; Howlett et al. 2018). People who engage in policy design must take these dynamics into account as disregarding them may result in "poorer outcomes than anticipated" (Kern and Howlett 2009, 404). The obtained insights into the case's fitting process between policy goals and instruments raises two main implications for policy design practice.

First, the study confirms earlier findings that practitioners pay limited attention to deliberately devising integrated mixes of policy goals and instruments (e.g. Rayner and Howlett 2009; Rayner et al. 2017). Linking the development of policy goals and policy instruments by integrating decision-making on policy design elements appears to be an essential first step. In the case of Dutch national infrastructure planning, this can be observed in the separate development of policy goals and instruments. Goals were established first, which resulted in drift. Subsequently, the instrument mix was adapted to restore congruence between goals and instruments, which gave rise to an intricate and ongoing fitting process between policy elements that was primarily led by the development of goals. Surprisingly, policy design outcomes had only minimal impact on this fitting process. This finding diverges from other studies (see Capano and

Woo 2018; del Río 2014; Rogge 2018) that underline monitoring and evaluation as a central component in dynamic processes of policy design.

Second, regarding approaches to policy design, literature refers to patching and packaging as main alternatives. Theoretically, packaging is the preferred mode of design because it negates any negative influences of past design choices (Howlett and Rayner 2013). The observed development trajectory of policy goals further supports this notion; by replacement, coherence was maintained, and the limited influence of preexisting elements allowed policy goals to develop flexibly. In line with Rayner et al. (2017), our results also corroborate that applying smart patches can be helpful when the rigidity of existing policy elements makes replacement too time-consuming or even impossible. On an instrumental level, a combination of layering and conversion was used. This illustrated the two-sided aspect of policy layering as a strategy, which has been discussed in literature (Gunningham and Sinclair 1999; Howlett et al. 2018). On the one hand, it can help to reduce incongruences that developed as a result of policy stretching. Figure 2 shows how the introduction of policy instruments in the policy formation stage accommodated policy goals on the regional integration of land use and transport planning. On the other hand, layering gave rise to tensions between old and new instruments. Conversion was successfully used to resolve some of these instrumental inconsistencies. However, the rigidity of some policy instruments did not allow for conversion to occur.

6. Conclusion

The objective of this study was to gain insight into the interplay between policy design dynamics and policy design fit, and to formulate practical implications. To this end, we performed a single in-depth longitudinal case study of Dutch national transport planning. As the transport sector has not received much attention in policy design studies, it has allowed for cross-sectoral comparison with other studies. Furthermore, the single case study focus allowed for a more in-depth perspective on the intricate and ongoing fitting process between policy goals and instruments. In this way, the present study aims to contribute to the understanding and implications of temporality in new policy design theory and practice.

Theoretically, this study finds that policy designs are constantly developing over time in an ongoing fitting process between goals and instruments, in which every moment of fit – i.e. goal coherence, instrumental consistency and congruence between goals and instruments – is temporary. Comparing our findings with previous studies, it may be concluded that these processes of policy design fitting are inherently case-specific since they are inherently shaped by contextual influences such as past design choices and institutional setting. However, over time, policy design tends to expand and become increasingly complex. In the context of Dutch national infrastructure planning, the process of policy design fitting was shaped by a dynamic mix of goals and instruments that developed along distinct trajectories. This development process was guided by policy goals; these changed quite flexibly through replacement, and subsequently, the mix of instruments was tailored to fit these new goals by means of layering and conversion. In other words, first the adoption of new policy strategies created

policy drift, but this was incrementally restored by means of patches in the instrument mix. Even though these patches were successful in restoring congruence in a “stretching” policy design, they gave rise to inconsistencies between old and new instruments that could only be partly restored through conversion, due to the rigidity of some on the established policy instruments.

From the perspective of policy design practice, these theoretical findings carry a number of implications. First, they suggest that new policy design thinking has remained a predominantly theoretical notion. Integrating decision-making on the policy goals and instruments is an essential initial step. Furthermore, the study shows once more that the evolution of a policy design is an ongoing process, which implies that policy designing should also be an ongoing process: a continuous effort at maintaining policy design fit in the face of these dynamics. Monitoring and evaluation of policy design outcomes should be incorporated as a key element of policy design process; if a design does not deliver the intended outcomes, this should be a reason to engage in policy redesign. Finally, the study reveals which policy design approach could be used to improve policy design fit. It appears that policy packaging is the preferred mode of policy design, as it allows elements to be formulated afresh as a coordinated unity. However, the study also illustrates that when designers are dealing with rigid preexisting policy elements, smart policy patches can successfully improve congruence between goals and instruments. This study also shows that this approach to improving policy design fit can give rise to tradeoffs between old and new policy instruments. Supplementing layering with conversion can be a strategy for resolving these inconsistencies.

The single in-depth case study allowed for a detailed examination of the interplay between policy dynamic and fit, and it suited the context-dependent nature of policy design study; however, this type of research makes it difficult to generalize findings to other cases. This should be borne in mind when reading our conclusions; nevertheless, we tried to strengthen these by comparing our findings to similar case studies from other disciplines. Furthermore, this study revealed some other worthwhile areas for future research that would benefit policy design practice. First, the outcomes suggested that the institutional context played a prominent role, not only in how policy designs evolve over time but also in the way in which institutions influence how instruments are used to produce policy outcomes. The field of policy design would benefit from more insight into the interplay between policy designs and policy design context. Second, this study’s outcomes imply that further research should be undertaken on the monitoring and evaluation of policy design outcomes and on how this may serve as input for policy design processes.

Disclosure statement

No potential conflict of interest was reported by the authors.

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Appendix A

Respondent list

Reference	Function	Date
Expert interviews		
Respondent 1	Employee Ministry of Infrastructure and the Environment – DGB	October 11 2016
Respondent 2	Employee Rijkswaterstaat – WVL	October 11 2016
Respondent 3	Employee Ministry of Infrastructure and the Environment – DGRW	October 11 2016
Respondent 4	Employee Ministry of Infrastructure and the Environment – DGRW	October 17 2016
Respondent 5	Employee Ministry of Infrastructure and the Environment – DGMI	October 18 2016
Respondent 6	Employee Rijkswaterstaat – BS	October 19 2016
Respondent 7	Employee Rijkswaterstaat – BS	October 19 2016
Respondent 8	Employee Rijkswaterstaat – WVL	October 24 2016
Respondent 9	Employee Ministry of Infrastructure and the Environment – DGB	October 25 2016
Respondent 10	Employee Council for the Environment and Infrastructure	October 25 2016
Respondent 11	Employee Council for the Environment and Infrastructure	October 25 2016
Respondent 12	Employee Netherlands Environmental Assessment Agency	October 25 2016
Respondent 13	Employee Ministry of Infrastructure and the Environment – DGRW	October 26 2016
Respondent 14	Employee Ministry of Infrastructure and the Environment – DGRW	October 26 2016
Respondent 15	Employee Ministry of Infrastructure and the Environment – DGRW	October 26 2016
Respondent 16	Employee Ministry of Infrastructure and the Environment – HBJZ	October 26 2016
Respondent 17	Employee Ministry of Infrastructure and the Environment – DGB	November 1 2016
Respondent 18	Employee Ministry of Infrastructure and the Environment – DGRW	November 2 2016
Respondent 19	Employee Ministry of Infrastructure and the Environment – DGRW	November 2 2016
Respondent 20	Employee Netherlands Environmental Assessment Agency	November 8 2016
Respondent 21	Employee Ministry of Infrastructure and the Environment – DGMI	November 17 2016
Focus group 1		
Respondent 22	Employee Rijkswaterstaat – WVL	January 01 2017
Respondent 23	Employee Rijkswaterstaat – BS	January 01 2017
Respondent 24	Employee Rijkswaterstaat – BS	January 01 2017
Respondent 25	Employee Ministry of Infrastructure and the Environment – DGRW	January 01 2017
Respondent 26	Employee Ministry of Infrastructure and the Environment – DGB	January 01 2017
Respondent 27	Employee Rijkswaterstaat – GPO	January 01 2017
Respondent 28	Employee Ministry of Infrastructure and the Environment – DGRW	January 01 2017
Focus group 2		
Respondent 29	Employee Rijkswaterstaat – GPO	January 25 2017
Respondent 30	Employee Rijkswaterstaat – MN	January 25 2017
Respondent 31	Employee Rijkswaterstaat – GPO	January 25 2017
Respondent 32	Employee Rijkswaterstaat – WNZ	January 25 2017
Respondent 33	Employee Ministry of Infrastructure and the Environment – DGRW	January 25 2017
Respondent 34	Employee Ministry of Infrastructure and the Environment – DGRW	January 25 2017
Respondent 35	Employee Ministry of Infrastructure and the Environment – DGRW	January 25 2017
Workshop 1		
Respondent 36	Employee Ministry of Infrastructure and the Environment – DGRW	February 02 2017
Respondent 37	Employee Ministry of Infrastructure and the Environment – DGB	February 02 2017
Respondent 38	Employee Ministry of Infrastructure and the Environment – DGRW	February 02 2017
Respondent 39	Employee Rijkswaterstaat – WVL	February 02 2017
Respondent 40	Employee Ministry of Infrastructure and the Environment – DGRW	February 02 2017
Respondent 41	Employee Rijkswaterstaat – BS	February 02 2017
Respondent 42	Employee Rijkswaterstaat – WVL	February 02 2017
Respondent 43	Employee Ministry of Infrastructure and the Environment – DGRW	February 02 2017
Respondent 44	Employee Rijkswaterstaat – WVL	February 02 2017
Workshop 2		
Respondent 45	Employee Ministry of Infrastructure and the Environment – DGB	September 14 2017
Respondent 46	Employee Ministry of Infrastructure and the Environment – DGB	September 14 2017
Respondent 47	Employee Ministry of Infrastructure and the Environment – DGB	September 14 2017
Respondent 48	Employee Ministry of Infrastructure and the Environment – DGRW	September 14 2017
Respondent 49	Employee Ministry of Infrastructure and the Environment – DGRW	September 14 2017
Respondent 50	Employee Ministry of Infrastructure and the Environment – DGRW	September 14 2017
Respondent 51	Employee Rijkswaterstaat – WVL	September 14 2017

Appendix B

Policy document	General policy aim	Policy goals on transport infrastructure planning and development
1988 Second Structural Plan for Traffic and Transport – in Dutch: 2e Struatuurschema Verkeer en Vervoer	Overcome fragmentation in traffic and transport sector and find the right balance between individual freedom, accessibility and livability through inter-organizational collaboration and an inter-sectoral approach	<p>1. Improve accessibility</p> <p>a. Improve accessibility for commercial traffic and freight</p> <ul style="list-style-type: none"> – Change for congestion per road section is less than 2% – Priority is given to national transport corridors <p>b. Improve accessibility of public transport</p> <ul style="list-style-type: none"> – Reliable, comfortable and fast trains that reach 160–200 km/h on national transport corridors <p>2. Direct mobility</p> <p>a. concentrate workplaces, housing, recreational activities and public services</p> <ul style="list-style-type: none"> – concentrate housing and workplaces around public transport stops. This is expected to reduce the growth in car commutes in urban areas by 5–10% – concentrate workplaces and public services around public transport nodes – new large scale recreational uses should be accessible by public transport <p>b. Reduce the expected 70% growth in car use to 35% by providing alternative mobility options</p> <p>3. Improve livability</p> <p>a. reduce the spatial impact of road infrastructure and limit the fragmentation of nature and landscape by road infrastructure</p> <ul style="list-style-type: none"> – restrain the development of new infrastructure; find alternative solutions for mobility issues – measures should be taken to integrate new roads into existing spatial context in order to mitigate the spatial impact of infrastructure development projects
2004 National mobility plan – in Dutch: Nota Mobiliteit	Stimulate economic growth a social development by coordinating spatial planning, transport and economy on local, regional and national level	<p>1. Reliable transport and fast flow of traffic</p> <ul style="list-style-type: none"> – Solve the traffic bottlenecks that are expected until 2020; thereby giving priority to the national corridors – Improve the coordination between mobility, economy and land use planning – Optimally exploit existing infrastructural capacity and adopt infrastructure as guiding principle for land use development

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Policy document	General policy aim	Policy goals on transport infrastructure planning and development
2012 Infrastructure and spatial planning strategy – in Dutch: Structuurvisie Infrastructuur en Ruimte	Integrating land use and transport planning policy to improve the economic competitiveness, accessibility and safety of the Netherlands	<ul style="list-style-type: none"> – Adopt an area-oriented planning approach. This implies taking an integrated perspective on infrastructure, land use, environment, economy and landscape <p>2. Public transport</p> <ul style="list-style-type: none"> – concentrate urban development around existing public transport nodes such as train stations – facilitate regional governments in executing their responsibility to coordinate between infrastructure and land use planning and development – coordinate between different public transport services, transport networks and modes transport – improve the reliability and exploitation of rail transport services and rail infrastructure <p>3. Environmental quality</p> <ul style="list-style-type: none"> – mobility growth for economic development cannot go at the expense of environmental quality – integrate new infrastructure developments into the existing spatial context
		<p>1. Increase the economic competitiveness of the Netherlands</p> <ul style="list-style-type: none"> – create an excellent spatial-economic structure that is characterized by an attractive business climate, good accessibility and a concentration of market sectors – the Netherlands is in the top 10 of most competitive economies – optimal international accessibility of urban regions – optimal connectivity between different infrastructure networks via multimodal transit hubs and a good coordination between infrastructure and land use planning and development <p>2. Improve accessibility</p> <ul style="list-style-type: none"> – the national road, rail and water infrastructure networks are robust and ensure an ongoing operation of the mobility system – the existing mobility system is optimally exploited <p>3. An integrated approach</p> <ul style="list-style-type: none"> – ensure integrated regional operationalization of national policy goals in intergovernmental regional development agendas

Policy phase	Dutch national infrastructure planning, programming, and budgeting system			
	1997 MIT Rules	2004 MIT Rules	2009 MIRT Rules	2011 MIRT Rules
Formation Phase			(Δ) MIT changed to MIRT. R stands for "space." It reflects the policy goal to take into account the interrelation between land use and transport.	2016 MIRT Rules
			(+) Governmental deliberations, in Dutch: <i>bestuurlijke overleggen MIRT</i>. Half yearly meetings in which formal MIRT decision making occurs. These meetings are also meant to discuss the progress of MIRT initiatives.	(Δ) Governmental deliberations
				(+) Strategic deliberation between national and regional government and other relevant public and private stakeholders.
				(+) 2014 Public Participation Code, in Dutch: <i>Code maatschappelijke participatie</i> .
	(+) Regional development agenda, in Dutch: <i>Gebiedsagenda</i> The regional development agenda is an integrated policy agenda between national and regional governments on land use, mobility, water and climate, housing, business agriculture, nature and landscape policy. There are 4 regional development agendas. These agendas are discussed and updated during the half yearly governmental	(Δ) Regional development agenda (+) Regional development agendas should be continually updated and used throughout the whole policy process.	(Δ) Regional development agenda (+) They have an integrated character and include all spatial issues that require collaboration between national and regional government such as accessibility, water safety, water quality, climate adaptation, nature, sustainability, cultural	(Δ) Regional development agenda (+) Regional development agendas are made in collaboration with all relevant public and private stakeholders. (+) They have an integrated character and include all spatial issues that require collaboration between national and regional government such as accessibility, water safety, water quality, climate adaptation, nature, sustainability, cultural

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Dutch national infrastructure planning, programming, and budgeting system				
Policy phase	1997 MIT Rules	2004 MIT Rules	2009 MIRT Rules	2011 MIRT Rules
			deliberations. They provide themes for explorative studies.	heritage, transboundary issues, spatial-economic policy and energy policy. (Δ) There are 7 regional development agendas. (+) Implementation and monitoring should be included in the process of agenda setting. (Δ)MIRT investigation
		(+) MIRT investigation, in Dutch: <i>MIRT onderzoek</i> A MIRT investigating may be started to further explore and define a policy issue or to further specify ongoing regional area-development projects to stimulate their execution. The outcomes of a MIRT investigation does not result in a decision, but may be used to update the regional development agenda, change rules and regulations or make governmental agreements. A MIRT investigation should be performed according to Sneller&Beter guidelines. (Δ) Decision 1: Start decision, in Dutch: <i>Startbeslissing</i> (+) A start decision puts down if the Route Act		(Δ) A MIRT investigation may have 3 outcomes: i) no further action is required, ii) identified issues can be solved through governmental deliberations or outside MIRT, iii) advice is given to prepare a start decision. (+) The objective, scope, planning and the actor who carries responsibility of the investigation are defined in governmental deliberation. (Δ) Decision 1: Start decision (Δ) The start decision report must include following information:

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Dutch national infrastructure planning, programming, and budgeting system				
Policy phase	1997 MIT Rules	2004 MIT Rules	2009 MIRT Rules	2011 MIRT Rules
				2016 MIRT Rules
				<p>applies and an explorative study is combined with a "strategic impact assessment" and an "integrated strategic spatial plan" – <i>in Dutch: structuurvisie</i>. Otherwise, the explorative study has no formal requirements.</p> <p>(+) The availability of budget is a precondition for a start decision.</p> <p>(Δ) A start decision is made by the minister of Infrastructure and Environment in consultation with involved regional representatives.</p> <p>(Δ) The start decision report must include information on: (i) the spatial context and possible conflicts, (ii) the formal national and regional responsibilities in terms of spatial quality and integration, (iii) the national interest in the project to legitimize national government involvement, (iv) the scope of the possible solutions that will be included in the explorative study, (v) whether the regular or shortened route procedure applies, (vi) a budget plan</p>
				<p>(Δ) The problem/policy issue is defined from a broad scope; besides accessibility, water and land use, sustainability, energy neutrality, cultural heritage, soil and subsurface, climate adaptation and international perspective.</p> <p>(+) explicitly take into account climate change.</p> <p>(+) motivate how an adaptive approach is applied.</p> <p>(Δ) 75% of the required finances for the most probable solution should be available.</p> <p>(Δ) Determine if the regular route procedure (excl. integrated strategic spatial plan) or extended route procedure (incl. integrated strategic spatial plan) applies.</p>

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Dutch national infrastructure planning, programming, and budgeting system				
Policy phase	1997 MIT Rules	2004 MIT Rules	2009 MIRT Rules	2011 MIRT Rules
				for projects that follow the shortened route procedure. For other initiatives, a global budget plan should be given, (vii) a proposition on the financial and human resources to perform the explorative study, (viii) the roles and responsibilities of national and regional government in the execution of the explorative study, and the legal procedures that apply.
Adoption phase	Explorative study, in Dutch: Verkenningenfase	(A) Explorative study, in Dutch the name changed to Verkenningfase.	(A) Explorative study	(A) Explorative Study
	The explorative study aims at analyzing transport problems and finding possible solutions. It consists of two decision-making moments.	(+) Explorative Studies should be executed following the 2002 guideline "MIT-verkenning nieuwe stijl."	(A) Decision 1: Start decision	(A) Decision 2: Decision on preferred solution
			(+) An initiative should be labeled as either sectoral or area-oriented – meaning it integrated infrastructure and land use development.	(+) Explore the possibilities of early market involvement though a market scan and optionally the instrument public private comparator.
	Decision 1: Start decision, in Dutch: Intake besluit	(A) Decision 1: Start decision	(+) The National Mobility and Accessibility Analysis – in Dutch: <i>Nationale Markt en Capaciteit Analyse</i> – should be used to identify transport bottlenecks.	(A) A non-infrastructure solution should be included and evaluated using a SCBA.
	A start decision is referred to as an "initiative" and functions as a temporary problem acknowledgement of the Minister of Transport, Public Works and Water Management.	(+) A problem analysis should: (i) explore the if market involvement will benefit creativity and an integrated approach to project development and delivery, (ii) identify	(+) A start decision for an area-oriented project study must be taken by two	(+) Sustainability check (in Dutch: <i>Omgevingswijzer</i>) and value engineering are instruments which may be used during the explorative study.
				(+) Adaptive programming is

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Policy phase	Dutch national infrastructure planning, programming, and budgeting system			
	1997 MIT Rules	2004 MIT Rules	2009 MIRT Rules	2011 MIRT Rules
<p>The decision is made based on an report including:</p> <p>A problem analysis should describe: (i) a problem statement including motivation, scope, urgency and expected developments, (ii) how it relates to relevant policy goals and strategies, (iii) stakeholders; their involvement and responsibilities and (iv) political support and statements.</p> <p>Decision 2: Decision on project study, in Dutch: <i>Opdracht planstudie</i></p> <p>By taking a decision on project study, the minister of transport, public works and water management acknowledges the problem and calls for further investigation. The decision is made based on a project study report that provides a problem statement and presents possible alternative solutions. The problem analysis should include: (i)</p>		<p>conditions for public-private collaboration, including possibilities for cost sharing.</p> <p>(+) An explorative study needs to stay "mean and lean" and finish within a year.</p> <p>(Δ) Decision 2: Decision on project study, in Dutch the named changed to <i>Planstudiebesluit</i>.</p> <p>(+) In case Route act applies, the decision on project study should be made together with the Minister of Housing, Spatial planning and the Environment.</p> <p>(+) To promote autonomy of regional and local government, decision making on nationally funded alternatives under €112.5 million, which are without a clear national interest, have been put under the responsibility for regional government. For The Hague, Rotterdam and Amsterdam region this is limit is €225 million.</p>	<p>ministers and a sectoral project study may be taken one.</p> <p>(Δ) Criteria for the start decision are redefined. It should include: (i) a description of the problem that includes the underlying cause, level of scale, urgency, opportunities, interrelating policy sectors that should be included in the explorative study, description of relevant legislation, national and regional policy goals, priorities and interests, (ii) describe the opportunities for an area-oriented approach and motivate based on given criteria if a sectoral or area-oriented approach is needed, (iii) spatial scope, (iv) a description of policy themes and transport modes that are included in the study, (v) stakeholder involvement plan that describes their roles and responsibilities in the explorative study, a stakeholder participation plan, political statements and support, (vi) time</p>	<p>can be included to deal with future uncertainties.</p> <p>(Δ) Decision 2: Decision on preferred solution</p> <p>(Δ) In case of a mobility issue, a non-infrastructure solution should be included.</p> <p>(Δ) A preferred alternative may consist or adaptive package/program of interrelated measures.</p> <p>(+) The SCBA of the preferred solution must be performed in line with the guideline "KBA bij MIRT Verkenningen." A non-infrastructure alternative should be included.</p>
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Policy phase	Dutch national infrastructure planning, programming, and budgeting system			
	1997 MIT Rules	2004 MIT Rules	2009 MIRT Rules	2016 MIRT Rules
	comprehensive problem statement including underlying cause, urgency, spatial scale, problem scope – in terms of accessibility, congestion, safety and livability, relevant trends and developments, (ii) how the problem relates to relevant policy goals and strategies, (iii) problem timeline, (iv) updated stakeholder analysis describing their roles and involvement, (v) political support and statements. The description of a problem solution should include: (i) the solution, including expected effects and indicative costs and planning, (ii) how it relates to spatial planning, environment and economy (iii) political and interdepartmental views and preferences on the defined solutions.	(+) The description of the problem solutions must include: (i) an impact assessment based on the guideline "OEI Leidraad," (ii) a plan on how to manage possible risks regarding time planning, budget and political commitment.	planning – maximum of 2 years, budget plan and human resources for the explorative study. (Δ) Decision 2: was renamed "decision on preferred solution," in Dutch: voorkeursbeslissing (Δ) A decision on preferred solution selects one solution, thereby excluding other alternatives from the project study. A decision on preferred solution should be made two years after the start decision. A decision on preferred solution may include one infrastructure project or a program of interrelating infrastructure and land use development projects. (+) The problem statement should include (i) an extensive analysis of the problem and identifies opportunities for synergies. It describes the underlying causes of the problem and the urgency. Furthermore, it includes an analysis of the spatial context in relation to the defined solution that incorporates	

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Policy phase	Dutch national infrastructure planning, programming, and budgeting system			
	1997 MIT Rules	2004 MIT Rules	2009 MIRT Rules	2011 MIRT Rules
			themes such as economic development, safety, housing, environment etc. Additionally, it defines project goals, (ii) a market consultation to assess benefits of including market parties and a process design of how these stakeholders are included throughout the decision-making process (+)The description of a problem solutions should include: (i) a broad assessment of possible solutions and for the 3 most promising options a detailed reflection on accessibility, safety, economy, costs and benefits, management and maintenance, operation and the impact on spatial context, air quality, noise, nature and water, (ii) a budget plan includes possibilities for public private partnerships, pre-financing with decentral governments or private partners, financial viability in form of a business case and the division of costs between partners, (iii) an implementation – <i>in Dutch: uitvoeringsstrategie</i> – should be made in case the preferred solution	2016 MIRT Rules

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Dutch national infrastructure planning, programming, and budgeting system				
Policy phase	1997 MIT Rules	2004 MIT Rules	2009 MIRT Rules	2011 MIRT Rules
	<p>Here solutions are further developed and explored, and a preferred solution is chosen. It is called a Route decision when the solution involves the development of national road, water and railway infrastructure. In case of regional or local infrastructure, it is referred to a Project decision.</p> <p>For road, water and regional/local infrastructure, a route/project decision is made based on a report including a problem statement and the description of possible alternative solutions. The problem statement should include: (i) a detailed problem analysis that differentiating between local, regional and through traffic, (ii) in the case of road infrastructure, information should be provided on congestion and road safety, (iii) in the case of water infrastructure it must include information on modalities, traffic demand versus capacity, commercial versus recreational vessels and</p>	<p>(Δ) marks the end of the project study</p> <p>(+) the required financial resources need to be available before a route/project decision can be made.</p> <p>(+) Project Studies on national highway and railway development should explore the financial and societal benefits of public-private partnerships. For highway development, a specific Market Scan should explore benefits of public-private partnerships, the possibilities for integrated area development and the preferred tendering format.</p> <p>(+) A Water Management Check – <i>in Dutch: Watertoets</i> – should be performed for alternatives comprising the development of national road and waterway infrastructure.</p>	<p>between projects occurs along an implementation strategy.</p> <p>(Δ) Project studies will differ between type of projects. For national infrastructure development the Route Act applies. In these cases a route decision is taken instead of a Project decision. A route decision is taken by the minister. When a solution includes land use developments the decision-maker that is legally responsible according to the Spatial Planning Act – <i>in Dutch: Wet ruimtelijke ordening</i> – must make the project decision.</p> <p>(Δ) Decision 4: “decision on execution” was moved back from the realization phase to the project study decision.</p> <p>(Δ) Decision 3: Project decision.</p> <p>(+) A project decision provides the legal ground to execute the project</p> <p>(+) an environmental impact assessment (EIA) must be carried out on the preferred solution</p>	<p>development falls under the Route Act.</p> <p>Δ Decision 4 – decision on execution – was merged with the project decision.</p>
				2016 MIRT Rules
				of a package of interrelating measures.

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Policy phase	Dutch national infrastructure planning, programming, and budgeting system			
	1997 MIT Rules	2004 MIT Rules	2009 MIRT Rules	2016 MIRT Rules
	<p>safety, (iv) for local/regional infrastructure: focus on updating and specifying problem definition in line with the requirements of the decision on project study, (v) identify involved stakeholders and their roles and responsibilities, (vi) relation to policy goals and strategies. The description of a problem solution should: (i) describe possible solutions in terms of: costs, environmental impact, safety, congestion, economic effects, land use, (ii) include a study whether the problem can be solved by better exploiting existing infrastructure, (iii) include a non-infrastructure solutions as a possible alternative, (iv) reflect on the interrelation of proposed alternatives to spatial planning, environment, economy and interdepartmental views, (v) describe political preferences and views on defined solutions, (vi) include a detailed project</p>		<p>(Δ) No further problem analysis is required. The analysis provided in the decision on preferred solution may be expanded if that is desired.</p> <p>(Δ) Alternative designs for the preferred solution must include (i) description of integration in existing spatial context, (ii) effects on accessibility, safety, land use, economy, nature and landscape, (iii) measures that are taken to deal with these effects, (iv) spatial and architectural quality of designs, (v) motivation how a certain design was chosen, (vi) environmental impact assessment (EIA), (v) identify involved actors and their support, (vi) identify the involved stakeholders and their roles and responsibilities for each individual project, (vii) explore the financial and societal benefits of public-private partnerships, (viii) for highway developments, a specific Market Scan should explore benefits of public-private</p>	

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Policy phase	Dutch national infrastructure planning, programming, and budgeting system			
	1997 MIT Rules	2004 MIT Rules	2009 MIRT Rules	2016 MIRT Rules
	<p>description of the preferred solution, (vii) an Environmental Impact Assessment is required for the development of national road and national water infrastructure.</p> <p>For rail infrastructure, a route/project decision is made based on a report including a problem statement and the description of possible alternative solutions. The problem statement should include: (i) an updated and further specified problem description, (ii) a description of how it relates to existing guidelines and policy goals, (iii) an assessment on political support for and political views on the problem. The description of a problem solution should: (i) be in line with the criteria described in the Route Act – <i>in Dutch</i>: <i>Tracéwet</i>, (ii) be described in terms of congestion, traffic engineering, transport capacity, environment, road safety, economy, land use, time and costs, (iii) include a technical description of the preferred alternative, (iv)</p>		<p>partnerships, the possibilities for integrated area development and the preferred tendering format, (ix)a project budget planning including required human resources (x) project planning that takes into account required legal procedures, coordination with other projects, communication and stakeholder involvement, and project milestones.</p> <p>(Δ) Decision 4: Decision on execution</p> <p>(Δ) This decision must be taken within three years of the project decision. But ideally these two decisions are taken at the same time. It forms a legal commitment with the involved market party to execute the project. A crucial precondition is the required funding is available.</p> <p>(Δ) A decision on execution is made based on a report including: (i) financial costs and benefits of the realization of the project, (ii) the type of public-private collaboration, (iii) Agreements on project scope, (iv) legal procedures</p>	

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Policy phase	Dutch national infrastructure planning, programming, and budgeting system			
	1997 MIT Rules	2004 MIT Rules	2009 MIRT Rules	2016 MIRT Rules
	include a land acquisition and spatial integration plan, (v) describe political preferences and views on defined solutions. An Environmental Impact Assessment is needed in case of national railway development.		and permitting, (v) identified management risks, (vi) land acquisition plan.	
	<p>Decision 4: Decision on project study completion, in Dutch: <i>afroding planstudie</i></p> <p>This decision marks the end over the technical and procedural preparation of the project and the start of project execution.</p> <p>For road and water infrastructure, a decision on project study completion is made based on a project plan that defines (i) milestones, (ii) budget plan, (iii) time planning, (iv) integration in to spatial context – including cables and pipelines, (v) permits, (vi) land acquisition, (vii) project risks and (viii) project organization.</p> <p>For rail and regional/local infrastructure, a decision on</p>			

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Policy phase	Dutch national infrastructure planning, programing, and budgeting system			
	1997 MIT Rules	2004 MIT Rules	2009 MIRT Rules	2016 MIRT Rules
	project study completion is made based on a project plan that defines: (i) the final design, (ii) a project description and project drawing, (iii) estimate of costs – differentiating between eligible and ineligible costs, (iv) time planning, (v) details on exploitation, (vi) description of legal procedures, (viii) achieved results in terms of transport capacity, quality and effectiveness.			